SITE REMEDIATION GUIDELINES

Prior to conducting any on-site remedial action, an Initial Site Remediation Work Plan must be submitted and a Site Remediation Permit issued by the Long Beach Department of Health and Human Services, Division of Hazardous Materials.

Upon completion of remediation, a Final Site Remediation Report with recommendations, findings and conclusions must be submitted. If the Department determines that corrective action goals have been met, as specified in the Site Remediation Work Plan, a "No Further Action" letter will be issued.

The following documents (A-C) must be submitted:

A. Site Remediation Permit Application (Attachment I) signed by property owner or operator.
B. Initial Site Remediation Work Plan/Corrective Action Plan with Proof of Qualification.
C. $118.00 permit fee. (Make checks payable to City of Long Beach DHHS).

All correspondence should be submitted to: *Long Beach Department of Health & Human Services*
Division of Hazardous Materials
2525 Grand Avenue, Suite 222
Long Beach, CA 90815
Phone: (562) 570-4131

A permit fee of $118.00 has been established for the Site Remediation project review. Where oversight exceeds three hours of staff time, an additional hourly fee will be assessed. Should the Remediation process exceed one (1) year in duration, an annual fee of $ 118.00 will be charged.

PROOF OF QUALIFICATION*

- Demonstrate adequate experience in performing Site Remediation.
- Document appropriate education and professional certification in your area of expertise.
- List the equipment required to conduct the project.
- Provide a copy of a current Long Beach or Signal Hill City Business License.

* Proof of Qualification will be kept on file for one year by Long Beach Department of Health and Human Services.

Any person, firm or corporation involved in the cleanup of hazardous materials must be qualified to do the work. The Initial Workplan/Report must be signed by AN INDEPENDENT California Registered Geologist, a California Certified Engineering Geologist, a California Registered Geotechnical Engineer or a California Registered Civil Engineer with sufficient experience in soils.

I. Initial Site Remediation Work Plan

(Work Plans that do not follow this format will be rejected)

1. **Information on Contaminants**

   a. List contaminants and their concentration ranges in a tabular format.
   b. Define the contamination plume. Show vertical and lateral extent of the contamination vs. concentration in plan view and in cross section.
   c. Estimate volume of contaminated soil.
   d. Include analyses by a State certified laboratory.

2. **Geologic and Hydrogeologic Information**

   An overview of site geology and hydrology
   a. Complete site-specific description of soil lithology (including boring logs).
   b. Documentation of the depth to groundwater table.
   c. Documentation of groundwater features.
   d. Background levels of contaminants in the vicinity of the site.

3. **Permits**

   Document all relevant permits.

4. **Site Health and Safety Plan**

5. **Estimated time to conduct cleanup.**

6. **Fate and risk of the impact of residual contamination on groundwater.**

7. **Specific methods that will be used to remediate the site.**

   a. Selection of an appropriate remediation technique for cleanup operations depends on the type and concentration of the contaminants, the site specific geology and hydrology, the site specific engineering constraints, environmental and public health effects, the site assessment findings, etc.
   b. See Attachment II for a listing of approved remediation methods.

8. **Justification for the methods to be used.**

9. **Provide assurance that all work will be done in accordance with all applicable. Local, State and Federal Laws and Regulations.**

10. **Remediation goals.**

11. **The date when project is to commence.**

Once the Initial Site Remediation Work Plan has been approved, a Site Remediation Permit will be issued.

II. DURING SITE REMEDIATION

The following is required after the Site Remediation permit is issued:

1. Submittal of quarterly progress reports once the implementation of the Site Remediation Permit has been issued.

III. FINAL REMEDIATION REPORT

Prior to final approval of a site cleanup, a Final Remediation Report on the work you have performed must be submitted. The Final Remediation Report should be a summary of actions taken in the process of remediation and the site description requirements followed through site assessment. In addition, the following items must be addressed.
(**Reports that do not follow this format will be rejected.)**

1. **Variations From Initial Remediation Work Plan**

   Identify all unexpected conditions encountered or variances from the actions proposed in the initial remediation report. Provide logs of all new borings and wells.

2. **Excavated Materials**

   Show limits of each earth material removal in plan view and cross-section. Provide evidence that soil removed from the site was properly manifested or otherwise transported.

3. **Post- Remediation**

   a. Verify the remediation method effectiveness through well monitoring and/or evidence of contamination extraction from the subsurface.
   b. Submit a Post -Remediation Monitoring Plan for residual contamination (applicable when cleanup levels have not been achieved).

4. **Attach laboratory results for all confirmation samples with chain of custody.**

5. **Findings and conclusions showing completeness of work.**

6. **Justification for findings and conclusions.**

ATTACHMENT I

CITY OF LONG BEACH DEPARTMENT OF HEALTH AND HUMAN SERVICES
LONG BEACH/SIGNAL HILL UNIFIED PROGRAM AGENCY

SITE REMEDIATION PERMIT APPLICATION

SITE LOCATION:_____

_____

NAME OF BUSINESS:_____

NAME OF OWNER/OPERATOR:_____

TELEPHONE NUMBER:_____

MAILING ADDRESS:_____

CONTACT NAME IF DIFFERENT FROM OWNER/OPERATOR:_____

TELEPHONE NUMBER:_____

MAILING ADDRESS:_____
_____

NAME OF SELECTED ENVIRONMENTAL CONSULTANT:_____

TELEPHONE:_____

ADDRESS:_____
_____

Name of Owner/Operator approving Site Remediation project:_____

Signature:_____
Date:_____

This Section for Official Use

Assigned Hazardous Materials Specialist(s) overseeing the project:_____
Date when Permit Application was received:_____

Remarks:_____
_____
_____

ATTACHMENT II

REMEDIATION METHODS

This office will not approve the use of a remediation technology that has not been approved by the California Department of Health Services, Remedial Technology Unit, Alternative Technology Division.

The following discussion of methods, procedures and equipment is not an endorsement by the City of Long Beach, Department of Health and Human Services, of any specific product or technique, nor are techniques limited to those discussed in this information document.

The following commonly used remediation technologies are listed in alphabetical order. The requirements for each of the listed methodologies are given:

1. **Bioremediation - In-Situ**

   In addition to the requirement for **Bioremediation - Above Ground**, include the following:

   a. Mechanism for introducing micronutrients and biocultures into soils.
   b. Depth of contamination.
   c. Plot plan to scale showing infiltration beds, recovery wells and treatment system.
   d. Location of monitoring and confirmation borings.

2. **Bioremediation - Above Ground**

   a. Estimate the total volume of soil to be treated.
   b. Number of treatment cells.
   c. Plot plan of treatment area to scale.
   d. Average thickness of soil spread per cell.

   e. Demonstration of the efficiency of the biocultures (i.e., case history, manufacturer's brochures, laboratory culturing, etc.).
   f. Amount of bioculture to be applied relative to the amount of soil to be treated.
   g. Soil toxicity study.
   h. Monitoring of micronutrients and pH.
   j. Type and amount of fertilizer used.
   k. Method and time frame for mixing and tilling.
   l. Method of containment used in treatment cells.

m. Number of confirmation samples per cell. (A minimum of one sample per ten cubic yards; up to five samples may be composite).
n. Depths of confirmation samples. (Indicate sampling locations on plot plan.)
o. Designate type of lab testing.
p. Indicate substance to be emitted during the treatment process and the end product after treatment.
q. Cartesian graphical plot of contamination reduction versus time in addition to tabular data. (per cell/subcell)
r. If the residual saturation is above action level, a general risk assessment is needed.
s. Proposed use of treated soil.

3. **Chemical Remediation**

a. Step-by-step description of the remediation process, including all chemicals used and the claimed chemical reactions taking place.
b. Detailed drawing/description of the remediation cell.
c. Detailed description of all safety monitoring and pollution control devices.
d. Sampling plan for the infringement and effluent wastes.
e. Incompatibilities of chemicals to be used or the reactions taking place with specific contaminants that may be found in the soil.

4. **Vapor Extraction**

a. Detailed drawing/description of all monitoring wells, vapor extraction wells, air/steam supply wells and their associated piping.
b. Plot plan showing location of all wells and associated piping.
c. Complete description and drawing of the treatment cell, including its air pollution monitoring and control system.
d. Monitoring and sampling plan for the infringement and effluent waste.
e. Direction of vapor flow - flow diagram.
f. Radius of influence of each well and justification for the location and number of proposed wells.

3. Excavation and Haul Away

a. Show the extent of the proposed excavation in plan view and in cross-sectional view.
b. Estimated volume of materials to be excavated and hauled away.
c. Location of all soil samples clearly defined in three coordinates. This obtained during and after remediation.